SECTION 16476
ENCLOSED CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 SECTION INCLUDES: Enclosed molded-case circuit breakers.

1.2 SUMMARY

A. This Section includes the following:
   1. Enclosed molded-case circuit breakers.

B. Related Sections: The following Sections contain requirements that relate to this Section.
   1. Section 16191, Supporting Devices
   2. Section 16196, Electrical Identification

1.3 REFERENCES

A. Federal Specifications (FS)
   1. W-C-375, Circuit Breakers, Molded Case, Branch Circuit, and Service.

B. National Electrical Manufacturers Association (NEMA)
   1. NEMA AB-893, Molded Case Circuit Breakers.

1.4 SUBMITTALS

A. Submit product data for information.
   1. Include circuit breaker (and current limiter) ratings, trip current, and let-through current curves, outline dimensions, and terminal lug sizes.

1.5 REGULATORY REQUIREMENTS

A. Furnish circuit breakers listed and classified by UL as suitable for specific application.

1.6 EXTRA MATERIALS

A. Furnish three of each size and type current limiter.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Square D.

B. Siemens.

C. General Electric.

D. Culter Hammer/Westinghouse.

2.2 MOLDED CASE CIRCUIT BREAKER

A. Circuit Breaker: NEMA AB 1; FS W-C-375; quick-make, quick-break, ambient compensated, thermal magnetic; capable of safely interrupting loads up to and including maximum interrupting rating listed below.

Frame size amps	Trip amps	Poles	Voltage	Symmetrical interrupting rating based on NEMA
100	15-100	1,2	120/240	7,500
100	15-100	3	240	10,000
100	15-70	3	480	14,000
225	70-225	3	480	22,000
400	250-400	3	480	30,000
600	300-600	3	480	35,000
800	400-800	3	480	50,000

B. Configuration: Inverse time automatic tripping. Instantaneous automatic tripping.

C. Field-Adjustable Trip Circuit Breaker: Provide circuit breakers with frame sizes 400 A and larger with mechanism for adjusting long time, short time, and continuous current setting for automatic operation.

D. Field-Changeable Ampere Rating Circuit Breakers: Provide circuit breakers with frame sizes 225 A and larger with changeable trip units.

E. Current Limiting Circuit Breaker: Provide circuit breaker with automatic-resetting current limiting elements in each pole. Let-Through Current and Energy: Less than permitted for same size Class RK-5 fuse.

F. Solid-State Circuit Breaker: Provide circuit breaker with electronic sensing, timing, and tripping circuits for adjustable current settings; instantaneous trip; and adjustable short time trip for all units with a 400 A frame rating and above.

G. Service Conditions:
1. Temperature: 13 to 92 deg. F -10 to 33 deg. C.
2. Altitude: 981ft [299 m].

H. Ratings: NEMA AB 1.

I. Terminal Lugs: NEMA AB 1.

2.3 CURRENT LIMITERS

A. Current Limiter: Designed for application with molded case circuit breaker.

B. Coordinate limiter size with trip rating of circuit breaker to prevent nuisance tripping and to achieve interrupting current rating specified for circuit breaker.

C. Provide interlocks to trip circuit breaker and to prevent closing circuit breaker when limiter compartment cover is removed or when one or more limiter is not in place or has operated.

2.4 ENCLOSURE

A. Enclosure: NEMA AB 1, unless otherwise noted.

B. Fabricate enclosure from steel.

C. Finish using manufacturer's standard enamel finish.

2.5 ACCESSORIES

A. Provide accessories to NEMA AB 1as indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify surfaces are ready to receive work.

B. Verify field measurements are as shown.

C. Verify required utilities are available, in proper location, and ready for use.

3.2 INSTALLATION

A. Install enclosed circuit breakers in accordance with manufacturer's instructions.

B. Install enclosures plumb.

C. Mounting Height: Top of enclosure maximum 6 ft above floor.

3.3 FIELD QUALITY CONTROL

A. Visually check and perform several mechanical ON-OFF operations on each circuit breaker.

B. Verify circuit continuity on each pole in closed position.

3.4 ADJUSTING

A. Adjust trip settings to provide adequate protection from overcurrent and fault currents.

B. Adjust trip settings so that circuit breakers are selective with other overcurrent protective devices in circuit.

END OF SECTION 16476